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# CAN WE LANDSCAPE TO ACCOMMODATE DEER? THE TRACY ESTATE RESEARCH GARDEN

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The landscape of New Jersey is remarkably rich in vegetation and open space, despite the state's reputation as the nation's most populous state. This landscape is increasingly the product of intense interaction between the white-tailed deer (*Odocoileus virginianus*) and both native and cultivated vegetation, particularly in suburban communities, where both the whitetail and the vegetation coexist in abundance. Nearly extirpated at the turn of the century due to over-hunting, the state's white-tailed deer population today exceeds 140,000 because habitat is ideal and hunting seasons are carefully regulated. In many instances, where landowners choose not to use hunting as a management tool, deer herds quickly exceed the cultural carrying capacity.

Two measures of cultural carrying capacity, damage to agricultural crops and to ornamental or garden plantings, are especially evident in the Garden State and in Morris County, the location for the Tracy Estate Research Garden. In New Jersey, 30% of farm cash receipts come from nursery and greenhouse plant production, most of it sold for local use. This commodity accounts for the majority of farm income in Morris County as well. The long-established horticultural tradition in Morris County supported by the county park commission is now hampered by the population of deer in this area.

Morris County, New Jersey today contains a deer population of approximately 12,000 animals that live amongst the remnants of large country estates that belonged to corporate moguls of the late 19th century. Many hired well-known landscape designers to create formal gardens modeled on Italian or English properties they knew from their travels. The Morris County Park Commission's headquarters at the former Frelinghuysen estate preserves the formal garden tradition while promoting landscape design, gardening at all scales, and introduction of new species of plants in new combinations for local residents.

Formerly a minor Morristown estate, the proposed Tracy Estate Research Garden has been owned and managed by the Morris County Park Commission since 1983. It is located just 30 miles from Manhattan in the Washington Valley area of Morris Township, where deer densities exceed 40 deer per square mile. Hunting is prohibited in Morris Township without written permission from the landowner and the township

council. Little or no hunting has occurred in the township since the late 1960s. Adjoining the Tracy estate is land owned by the Morris County Municipal Utilities Authority, the Seeing Eye Foundation and the Fosterfields Historic Farm, which is owned and managed by the Morris County Park Commission. No hunting occurs on these large tracts of undeveloped land though populations of deer have been reduced at Fosterfields by park employees using special damage control permits.

The Morris County Park Commission, manager of hundreds of acres of open space in this central New Jersey county, realized that the white-tailed deer residing on park land were having a detrimental effect on the vegetation on these properties. A Wildlife Management Advisory Committee to the Commission was formed to measure the dimensions of the problem and to find ways to mitigate the effects of the deer population of deer. One recommendation of the Committee was to determine if a landscape design could be developed to use plantings less attractive to the deer; planted in ways that might discourage heavy browsing. In 1990, the Morris County Park Commission commissioned landscape architect, Helen Heinrich to design a garden based on the lines and spaces of the gardens surrounding the Tracy mansion in the 1920s and 1930s. No attempt was made to restore the original plants in the garden, but to adapt the garden as much as necessary to the demands of the present deer population. The first step in developing such a design was to determine which plants were browsed by deer in this area, and which could be utilized in the garden design. No damage controls, such as fencing or repellents, would be used.

## METHODS

A literature survey was conducted (MacAninch and Fargione 1987, Fargione et al. 1992, Rutgers Cooperative Extension 1987, Heinrich 1989, Totemeier 1987, Blackburn (no date), Morris County Park Commission (no date) to determine deer plant food preferences. Local nurserymen and landscape contractors (D. Feruchi, pers. commun.); (W. Flemer, pers. commun.); (S. George, pers. commun.); (L. Maloancy, pers. commun.) were asked about their experience with deer browsing on plants. Loft Seed Company recommended the ornamental grasses to be relatively deer-resistant. The experience of the Heinrich design practice was consulted for plants that had proved to be relatively deer-

resistant in other -locations. The most deer resistant species determined by that review are reported in Appendix 1.

After reviewing the list of plants reported to be resistant to deer depredation, many of which were already severely weakened by deer browsing on this site, it seemed wise to test the most promising species before proposing investment in major plantings. In March, 1991 six test plots were installed with a variety of plant species from this suggested list.

Initially, the plants were set out at the test sites in their containers because it was not known how much immediate attention and damage from the deer they would receive. In May, 1991, they were surrounded by wood chips and in December, 1991, they were installed in beds and mulched with a woodchip mulch.

Plants installed in March, 1991 included:

<i>Berberis thunbergii</i>	Crimson barberry
<i>Buxus sempervirens</i>	Common boxwood
<i>Cotoneaster salicifolia</i>	Willowleaf cotoneaster
<i>Ilex glabra</i>	Inkberry holly
<i>Ilex meserve</i>	Meserve holly
<i>Juniperus chinensis</i> 'Pfitzeriana'	Pfitzer juniper
<i>Myrica pennsylvanica</i>	Bayberry
<i>Pieris japonica</i>	Japanese andromeda
<i>Picea glauca conica</i>	Dwarf Alberta Spruce
<i>Picea pungens glauca</i>	Colorado Blue Spruce

Plants installed in July, 1991 included:

<i>Achillea millefolium</i>	White yarrow
<i>Artemisia schmidtiana</i>	Silver mound 'Silver Mound' artemesia
<i>Eragrostis curvula</i>	Weeping lovegrass
<i>Erianthus ravennae</i>	Plume grass
<i>Festuca cinnerea</i>	Blue fescue
<i>Miscanthus sinensis</i>	Silver grass
<i>Miscanthus sinensis</i> 'gracillimus'	Maiden grass
<i>Monarda didyma</i>	Violet 'Violet Queen' Queen bee balm
<i>Nepeta faassemoo</i>	Catmint
<i>Pennisetum alopecuroides</i>	Fountain grass

<i>Santolina chamaecyparissus</i>	Lavender cotton
<i>Stachys byzantina</i>	Lamb's ears

In December, 1991, 21 plants were added to replace those that did not survive deer depredation or the summer drought. Several additional species were added at this time as well. These plants included:

<i>Berberis ladwynensis</i>	'Wm Penn' WilliamPenn barberry
<i>Berberis</i> spp	Golden barberry
<i>Buxus microphylla</i> <i>japonica</i>	Japanese boxwood
<i>Buxus sempervirens</i>	Common boxwood
<i>Convallaria majalis</i>	Lily of the valley
<i>Cotoneaster horizontalis</i>	Rockspray cotoneaster
<i>Epimedium</i> spp.	Epimedium
<i>Festuca cinnerea</i>	Blue fescue grass
<i>Ilex glabra</i>	Inkberry holly
<i>Myrica pennsylvanica</i>	Bayberry
<i>Picea glauca conica</i>	Dwarf Alberta spruce
<i>Picea pungens glauca</i>	Colorado blue spruce
<i>Pieris japonica</i>	Japanese andromeda
<i>Rhododendrom</i> sp.	Kurume Kurume azalea*
<i>Rhododendron</i> sp.	Exbury Exbury azalea*
<i>Thuja occidentalis</i>	'Woodwardi' Globe arborvitae
<i>Viburnum rhytidophyllum</i>	Leather-leaf viburnum
<i>Viburnum opulus</i>	Cranberry viburnum
<i>Yucca</i> spp.	Yucca

\*Not originally listed as deer-resistant.

Several grass species were installed during January, 1992. These species include:

<i>Acorus calamus</i>	Sweet flag
<i>Arrhenatherum elatius</i> <i>bulbosum</i>	Bulbous oat grass
<i>Calamagrostis acutiflora</i>	Feather stricta reed grass
<i>Chasmanthuim latifolium</i>	Northern sea oats
<i>Luzula nivea</i>	Wood rush
<i>Sasa pygmaea</i>	Pigmy bamboo

The six test plots were monitored from March, 1991 to December, 1992. Checks were made every few days after each planting, and once each week during the summer months. Plants were rated as follows:

- 0 - No browsing
- 1 - 1-25% of leaves or twigs browsed
- 2 - 26-75% of leaves or twigs browsed
- 3 - 76-100% of leaves or twigs browsed

## RESULTS

The species of shrubs planted at the Tracy state in decreasing order of attractiveness to deer are listed as follows:

Species	Browse rate
Bayberry	3
Willowleaf cotoneaster	3
Meserve holly	3
Pfitzer juniper	3
Globe arborvitae	3
Inkberry holly	3
Cranberry viburnum	3
Leatherleaf viburnum	3
Kurume azalea*	3
Exbury azalea*	3
Crimson pigmy barberry	2
Rockspray cotoneaster	2
Golden barberry	2
Japanese boxwood	1
Colorado blue spruce	1
Common boxwood	1
Dwarf Alberta spruce	1
Japanese andromeda	1
William Penn barberry	1

\*Not originally listed as deer resistant.

The species of ornamental grasses and perennials planted at the Tracy estate, in decreasing order of attractiveness to deer are listed as follows:

Species	Browse Rate
White yarrow	3
Yucca	3
Lavender cotton	2
Violet queen bee balm	2
Blue fescue	2
Lamb's ear	1
Christmas fern	3
Weeping love	1
Maiden grass	1

The plants in the test plots at the Tracy estate exhibiting no signs of deer depredation include the following species:

Catmint  
Silver grass  
Plume grass  
Fountain grass  
Silver mound artemesia  
Bulbous oat grass  
Feather reed grass  
Epimedium

Additional plant species already on the site apparently not attractive to the deer on this site are:

Pachysandra  
American holly  
Hay scented fern\*  
Narcissus  
Scilla\*  
Foxglove  
Siberian iris  
White snakeroot\*  
Japanese barberry  
Japanese andromeda  
Fragrant sumac

\*Not on original list of deer resistant plants.

The Tracy garden spaces were redesigned using the plants proven to be the most resistant to deer depredation at this site along with others that are believed to be likely candidates. The Morris County Park Commission is currently seeking funding to implement the design and continue testing against the nutritional needs of the current deer population.

## DISCUSSION

Some plants reportedly resistant to deer depredation, such as bayberry, juniper, holly, cotoneaster, yucca, arborvitae, viburnums and azaleas were highly preferred by deer at the Tracy estate. While severe deer damage to test plantings did not occur overnight, there was clear evidence of preference for certain plants within two or three days.

In some cases physical location protected vulnerable species, such as azaleas. Placing preferred species out of reach or surrounded by a barrier plant, such as the William Penn barberry, afforded some protection. The use of plants unattractive to deer, such as the ornamental grasses to surround a preferred species, such as the burning bush (*Euonymus alatus*) afforded additional protection. Physical barriers provided by some plant species seem to deter browsing. Gray dogwood was found to protect the attractive native tree seedlings (Austin 1991, Underwood et al. 1991) in Saratoga National Historical Park in New York, because the dense thicket of dogwood kept the seedlings out of reach. Thorns, rigid, sharp leaves, spiny foliage, and dense, thickets around

a more palatable plant may provide some protection (L. Makrancy, pers. commun.; W. Flemer pers. commun.; Porter 1991).

Physical damage occurred from rubbing, nibbling the growing tips in an apparent attempt to determine whether the plant was palatable. Boxwood, Colorado blue spruce, pachysandra, and dwarf Alberta spruce all were bitten by animals at times when other food was scarce. The latter was permanently damaged by removal of its leader which is not replaced in this slow-growing species.

Vegetation showed that deer continued throughout the year to pull down plants to be within browsing reach. Damage to the form and normal effectiveness of the plant will prevent its sale in the nursery and frustrate property owners to the point of political action, expensive exclusionary devices, or, if they have the resources, replacement by a less attractive species if possible.

A wide variety of perennials, such as Lamb's ear, iris, and foxglove may be used to fill in the spaces left vacant by deer depredation. However, many of perennials require full sun to grow and bloom and the list of shade tolerant perennials that are also deer-resistant is limited.

Evidence of deer presence and browsing existed in the garden throughout the year. Deer movements did not change much from month to month. However, they quickly responded to food sources made available when storms caused trees to blow down. They responded quickly to new test plantings, as well. The winter during the study period was relatively mild with only one snow fall. One cannot generalize that the Tracy estate deer would exhibit the same feeding preferences and impact on the vegetation if heavy snow cover existed over a long period of time. On the other hand, a hunting program including the Tracy property and the surrounding large open tracts to reduce the density of deer may alleviate the pressure on the ornamentals planted there. Some neighboring landowners interviewed in the course of this study expressed the belief that a majority of property owners were ready to work with the Morris County Park Commission to reduce deer populations and damage to their properties.

## MANAGEMENT IMPLICATIONS

The new Tracy garden planting design represents a compromise between deer and an ornamental landscape. It demonstrates that although the selection of plants has to be limited, a garden is more than a variety of flowers and shrubs. The form and shape of a garden can be preserved by using plants found to be most resistant to depredation. The functions of a garden can be maintained with a different palette of species whether the purpose is the view from a window, a place to take an afternoon stroll, or an attraction for butterflies or hummingbirds.

Plant species selection must be limited in areas of dense deer populations and the selection might become even more limited if a severe winter restricted the food available to the deer. More of a monocultural plant palette would run the risk of greater plant loss because increased species diversity provides a buffer against pests and disease.

Some native wildflowers, shrubs and trees may be relatively deer-resistant. These native species are likely to be more resistant to disease and pests and require less maintenance and are more valuable in the landscape because they provide habitat for other native animals and plants besides ornamental effects. But many valuable native species can be totally extirpated by repeated overbrowsing by deer. This is particularly the case with relatively scarce woodland spring wildflowers.

Plants selected by deer depend upon the food preferences of the individual herd and the competition for alternative food sources. The list of plants showing little damage included in this paper should only be used as a guideline in other locales. Homeowners should be encouraged to experiment with plant species reported to be deer-resistant in their area. Nursery businesses should become aware of the flowers, shrubs, and trees considered to be resistant to deer depredation in their area and be encouraged to propagate and maintain a greater variety deer-resistant plants in stock.

A combination of fencing, repellents, population control through hunting, experimenting with less desirable plants, and an increased tolerance of some amount of deer damage is suggested for homeowners in areas of dense deer populations. Such a balanced approach with reasonable aesthetic goals must contend, however, with the idealized visual images of gardens prevalent in all forms of media, a standard that is difficult to meet even when deer damage is slight.

Previous studies show (Heinrich 1986) that most Americans invest the landscape design of their residence with connotations of self-expression, self-worth, and social and economic status. Close to 80% of American households garden, investing billions of dollars on plants and tools (Gibbs 1988). Landscaping has been reported to have a recovery value upon resale of the property of 100-200 percent, more than any other popular home remodeling project (USDA 1993). In this context it is understandable that many gardens are willing to seek any solution to reduce deer damage to bearable levels. In possession of more biological information about this prolific species, they may become active proponents for multi-faceted population management approaches which prove effective.

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## APPENDIX 1

### SPECIES REPORTED TO BE MOST DEER RESISTANT

BOTANICAL NAME	COMMON NAME	BOTANICAL NAME	COMMON NAME
<i>Abies</i> spp.	Fir	<i>Clendula officinalis</i>	Pot marigold
<i>Acanthopanax siemboldianus</i>	Five leaf aralia	<i>Callicarpa dichotoma</i>	Purple beautyberry
<i>Acer negundo</i>	Boxelder	<i>Callicarpa japonica</i>	Japanese beautyberry
<i>Achillea millefolium</i>	Yarrow	<i>Calluna vulgaris</i>	Heather
<i>Aconitum uncinatum</i>	Monkshood	<i>Calycanthus fertilis</i>	Pale sweetshrub
<i>Acorus calamus</i>	Sweet flag	<i>Cassia</i> spp.	Senna, cassia
<i>Ageratum houstonianum</i>	Flossflower, ageratum	<i>Catalpa bignonioides</i>	Common catalpa
<i>Ailanthus altissima</i>	Tree of heaven	<i>Centaurea montana</i>	Mountain bluet
<i>Allium</i> spp.	Garlic, chives, wild onion	<i>Cephalotaxus harringtonia</i>	Japanese plum-yew
<i>Alnus serrulata</i>	Smooth alder	<i>Cercis occidentalis</i>	Red bud
<i>Alnus glutinosa</i>	Black alder	<i>Chamaecyparis obtusa</i>	Hinoki false cypress
<i>Althaea rosea</i>	Hollyhock	<i>Chamaedaphne calyculata</i>	Leatherleaf
<i>Anaphallis margaritacea</i>	Pearly everlasting	<i>Chasmanthium latifolium</i>	No. sea oats
<i>Anchusa azurea</i>	Italian bugloss	<i>Chelone</i> spp.	Turtlehead
<i>Anemone japonica</i>	Anemone	<i>Chionanthus virginicus</i>	American fringetree
<i>Anemone vitifolia robustissima</i>	Anemone	<i>Chrysanthemum maximum</i>	Shasta daisy
<i>Aquilegia</i> spp.	Columbine	<i>Cimicifuga racemosa</i>	Bugbane
<i>Aralia spinosa</i>	Devils walkingstick	<i>Clematis</i> spp.	Clematis
<i>Aralia elata</i>	Japanese angelica tree	<i>Clerodendron trichotomum</i>	Harlequin glory-bower
<i>Arctostaphylos uva-ursi</i>	Bearberry	<i>Clethra alnifolia</i>	Sweet clethra, summersweet
<i>Arctotis stoechadifolia</i>	African daisy	<i>Colchicum</i> spp.	Autumn crocus
<i>Arrhenatherum elatius bulbosum</i>	Bulbous oat grass	<i>Comptonia peregrina</i>	Sweet-fern
<i>Artemesia</i> spp.	Artemesia	<i>Convallaria majalis</i>	Lily of the Valley
<i>Asclepias tuberosa</i>	Butterfly weed	<i>Cotinus coggygia</i>	Smoke tree
<i>Asimina triloba</i>	Pawpaw	<i>Cornus</i> spp.	Dogwood
<i>Astilbe</i> spp.	Astilbe	<i>Cotoneaster</i> spp.	Cotoneaster
<i>Aruncus dioicus</i>	Goatsbeard	<i>Crataegus laevigata</i>	Hawthorne
<i>Berberis</i> spp.	Barberry	<i>Cryptomeria japonica</i>	Cryptomeria
<i>Betula</i> spp.	Birches	<i>Cunninghamia lanceolata</i>	China fir
<i>Buddleia alternifolia</i>	Fountain butterfly-bush	<i>Cytisus scoparius</i>	Scotch Broom
<i>Buddleia davidii</i>	Orange-eye butterfly-bush	<i>Davidia involucrata</i>	Davidia
<i>Buxus</i> spp.	Boxwood	<i>Delphinium</i> spp.	Larkspur
<i>Cactaceae</i> spp.	Cactus	<i>Dicentra spectabilis</i>	Bleeding heart
<i>Calamagrostis acutiflora stricta</i>	Feather reed grass	<i>Digitalis</i> spp.	Foxglove

BOTANICAL NAME	COMMON NAME	BOTANICAL NAME	COMMON NAME
<i>Elaeagnus angustifolia</i>	Russian-olive	<i>Juniperus rigida</i>	Needle juniper
<i>Eleagnus commutata</i>	Silverberry	<i>Juniperus communis</i>	Common juniper
<i>Enkianthus campanulatus</i>	Redvein enkianthus	<i>Knopfia uvaria</i>	Devils or red hot poker
<i>Epimedium</i> spp.	Epimedium	<i>Kolkwitzia amabilis</i>	Beautybush
<i>Erianthus ravennae</i>	Plume grass	<i>Lantana montevidensis</i>	Trailing lantana
<i>Erica carnea</i>	Winter heath	<i>Larix decidua</i>	European larch
<i>Erigeron philadelphicus</i>	Fleabane	<i>Lavandula officinalis</i>	Lavender
<i>Euonymus alatus</i>	Winged euonymus	<i>Leucothoe fontanesiana</i>	Drooping leucothoe
<i>Euonymus atropurpureus</i>	Wahoo	<i>Leucothoe racemosa</i>	Sweetbells
<i>Euphorbia cyparissias</i>	Spurge	<i>Ligustrum obtusifolium</i>	Myrica privet
<i>Festuca cinnerea</i>	Blue fescue	<i>Ligustrum ovalifolium</i>	California privet
<i>Ficus</i> spp.	Fig	<i>Lindera benzoin</i>	Spicebush
<i>Forsythia intermedia</i>	Forsythia	<i>Liquidambar styraciflua</i>	American sweetgum
<i>Galanthus nivalis</i>	Snowdrops	<i>Lonicera fragrantissima</i>	Winter honeysuckle
<i>Gaultheria procumbens</i>	Checkerberry	<i>Lonicera maackii</i>	Amur honeysuckle
<i>Gaylussacia baccata</i>	Black buckleyberry	<i>Lonicera tatarica</i>	Tartarian honeysuckle
<i>Geranium</i> spp.	Cranesbill	<i>Lupinus</i> spp.	Lupine
<i>Ginkgo biloba</i>	Ginkgo, maidenhair tree	<i>Lusimachia nummularia</i>	Moneywort
<i>Gleditsia triacanthos</i>	Honey locust	<i>Luzula nivea</i>	Wood rush
<i>Glmnocladus dioica</i>	Kentucky coffee tree	<i>Lychnis chalcidonica</i>	Maltese cross
<i>Gypsophila paniculata</i>	Baby's breath	<i>Lyonia ligustrina</i>	Male-berry
<i>Hamamelis virginiana</i>	Common witch hazel	<i>Lyonia mariana</i>	Staggerbush
<i>Hedera helix</i>	English ivy	<i>Maclura domifera</i>	Osage orange
<i>Helianthus</i> spp.	Sunflower	<i>Magnolia</i> spp.	Magnolia
<i>Helichrysum</i> spp.	Strawflower	<i>Mimulus</i> spp.	Mimulus, Monkey flower
<i>Helleborus</i> spp.	Hellebore	<i>Miscanthus sinensis</i>	Chinese silver grass
<i>Hydrangea paniculata</i>	Hydrangea	<i>Miscanthus sinensis 'gracillimus'</i>	Maiden grass
<i>Ilex aquifolium</i>	English holly	<i>Monarda didyma</i>	Bee balm
<i>Ilex cornuta</i>	Chinese holly	<i>Myosotis</i> spp.	Forget-me-not
<i>Ilex crenata</i>	Japanese holly	<i>Myrica californica</i>	Wax myrtle
<i>Ilex glabra</i>	Inkberry	<i>Myrica pensylvanica</i>	Northern bayberry
<i>Ilex opaca</i>	American holly	<i>Myrtus communis</i>	Myrtle
<i>Ilex verticillata</i>	Black-alder	<i>Narcissus</i> spp.	Daffodil, Jonquil
<i>Iris</i> spp.	Iris	<i>Nepeta faassenii</i>	Catmint
<i>Juglans regia</i>	English walnut	<i>Nyssa sylvatica</i>	Tupelo, pepperidge
<i>Juglans nigra</i>	Black walnut	<i>Oxalis oregana</i>	Oxalis, redwood sorrel
<i>Juglans cinerea</i>	Butternut	<i>Oxydendrum arhoreum</i>	Sorrel tree
<i>Juniperus chinensis</i>	Chinese juniper	<i>Pachysandra terminalis</i>	Japanese pachysandra



BOTANICAL NAME	COMMON NAME	BOTANICAL NAME	COMMON NAME
<i>Paeonia</i> spp.	Peony	<i>Sasa palmata</i>	Chimaki sasa
<i>Paulownia tomentosa</i>	Empress-tree	<i>Sasa pygmaea</i>	Pigmy bamboo
<i>Panayer orientale</i>	Oriental poppy	<i>Sassafras albidum</i>	Sassafras
<i>Parkinsonia aculeata</i>	Jerusalem thorn	<i>Scilla siberica</i>	Siberian squill
<i>Pennisetum alopurioides</i>	Fountain grass	<i>Sedum spsectabile</i>	Showy sedum
<i>Phaedranthus buccinatorius</i>	Blood red trumpet vine	<i>Solanum</i> spp.	Nightshade
<i>Philadelphus</i> spp.	Mockorange	<i>Stachys byzantina</i>	Lamb's ear
<i>Phyllostachys aurea</i>	Golden bamboo	<i>Stokesia laevis</i>	Stokes aster
<i>Phyllostachys aureosulcata</i>	Gold-furrowed bamboo	<i>Styrax japonica</i>	Japanese styrax
<i>Physocarpus opulifolius</i>	Common ninebark	<i>Symphoricarpos albus</i>	Snowberry
<i>Physosstegia virginiana</i>	Obedience plant	<i>Syringa chinensis</i>	Rouen lilac
<i>Picea abies</i>	Norway spruce	<i>Syringa reticulata</i>	Japanese tree lilac
<i>Picea glauca</i>	White spruce	<i>Syringia vulgaris</i>	Garden lilac
<i>Picea glauca conica</i>	Dwarf Alberta spruce	<i>Tagetes</i> spp.	Marigolds
<i>Picea pungens glauca</i>	Colorado blue spruce	<i>Taxodium distichum</i>	Bald cypress
<i>Picea pungens</i>	Blue spruce	<i>Thalictrum</i> spp.	Meadow rue
<i>Picea rubens</i>	Red spruce	<i>Thuja</i> spp.	Arborvitae
<i>Picea mariana</i>	Black spruce	<i>Thymus serpyllum</i>	Mother of thyme
<i>Pieris japonica</i>	Japanese andromeda	<i>Thyme vulgaris</i>	Common thyme
<i>Pinus</i> spp.	Pine	<i>Torreya nucifera</i>	Japanese torreyia
<i>Poncirus trifoliata</i>	Hardy orange	<i>Tradescantia virginiana</i>	Spiderwort
<i>Pseodosas japonica</i>	Metake	<i>Trillium</i> spp.	Trillium, Wake-robin
<i>Pulmonaria officinalis</i>	Lungwort	<i>Trollius laxus</i>	Globeflower
<i>Rhamnus catharticus</i>	Common buckthorn	<i>Tulipa</i> spp.	Tulip
<i>Rhamnus frangula</i>	Glossy buckthorn	<i>Vaccinium stamineum</i>	Deerberry
<i>Rheum rhaponticum</i>	Rhubarb, Pie plant	<i>Vaccinium corymbosum</i>	Northern highbush blueberry
<i>Rhododendron nudiflorum</i>	Pinxter azalea	<i>Vaccinium vacillans</i>	Dwarf dryland blueberry
<i>Rhododendron roseum</i>	Honeysuckle azalea	<i>Vaccinium ngustifolium</i>	Low sugar blueberry
<i>Rhododendron viscosum</i>	Swamp azalea	<i>Vaccinium macrocarpon</i>	Large cranberry
<i>Rhus aromatica</i>	Fragrant sumac	<i>Valeriana</i> spp.	Valerian
<i>Ribes odoratum</i>	Clove currant	<i>Viburnum</i> spp.	Viburnum
<i>Ribes sativum</i>	Red garden currant	<i>Vinca major</i>	Periwinkle
<i>Ribes uva crispa</i>	European gooseberry	<i>Vitex negundo</i>	Negundo chaste-tree
<i>Robinia pseudoacacia</i>	Black locust	<i>Yucca</i> spp.	Yucca, Spanish bayonet
<i>Rudbeckia gloriosa</i>	Gloriosa daisy	<i>Zantedeschia</i> spp.	Calla lily
<i>Salvia</i> spp.	Sage and salvia	<i>Zanthoxylum americanum</i>	Prickly-ash
<i>Sambucus racemosa</i>	Red elderberry		
<i>Santolina</i> spp.	Santolina		